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EXAMINER

HOFFMAN, BRANDON S

ART UNIT	PAPER NUMBER
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2136

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/608,209	Applicant(s) ENGLAND ET AL.	
	Examiner Brandon Hoffman	Art Unit 2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38-53 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 38-53 is/are rejected.
7) ☒ Claim(s) 43 and 45-48 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 38-53 are pending in this office action, claims 1-37 are canceled.
2. Applicant's arguments filed October 27, 2004, have been fully considered but they are not persuasive.

Claim Objections

3. Claims 43 and 45-48 are objected to because:
 - Claim 43 is dependent upon a canceled claim; it should apparently be dependent upon claim 38.
 - Claim 45 is missing the "and" after the third limitation.
 - Claims 46-48 depend from 45 and therefore inherit its deficiencies.Appropriate correction is required.

Rejections

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

5. Claims 38-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thue (U.S. Patent No. 6,002,707) in view of Maeshima et al. (U.S. Patent No. 6,486,923), and further in view of Kohn et al. (U.S. Patent No. 6,570,990).

Regarding claims 38 and 44, Thue teaches a method/machine readable medium of processing first, second, and third signals for use in a system having first, second, third and fourth signal lines, wherein the first, second, and third signal lines couple a source device to a destination device, a pseudo-random number generator being contained within the source device, the method comprising:

- Generating a fourth signal (col. 2, lines 6-24);
- Generating, using said pseudo-random number generator, pseudo-random output values (fig. 1, ref. num 110 and 130); and
- For each of the first, second, third and fourth signal lines, selecting, for transmission thereon, one of the first, second, third, and fourth signals, the selection being performed in a mutually exclusive manner and as a function of at least one of said pseudo-random output values (fig. 1, ref. num 130 and col. 2, lines 6-24).

Thue does not teach operating the source device to communicate with the destination device so as to establish a session key and synchronization information via one or all of the first, second, third and fourth signal lines during a vertical blanking

period; operating the pseudo-random number generator to generate said pseudo-random output values as a function of the established session key; and the selection also being performed by a matrix multiplication operation performed on the first, second, third and fourth signals utilizing matrix coefficients generated from a plurality of the pseudo-random output values.

Maeshima et al. teaches the selection also being performed by a matrix multiplication operation performed on the first, second, third and fourth signals utilizing matrix coefficients generated from a plurality of the pseudo-random output values (fig. 1, ref. num 50 and fig. 2).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine matrix multiplication utilizing matrix coefficients, as taught by Maeshima et al., with the method of Thue. It would have been obvious for such modifications because the pseudo-randomly generated matrix coefficients give a randomness to the encryption and the matrix multiplication operation using the coefficients allows a way to modify the red, green, and blue signals in order to encrypt the video signals (see col. 3, lines 21-23 of Maeshima et al.).

The combination of Thue in view of Maeshima et al. still does not teach operating the source device to communicate with the destination device so as to establish a session key and synchronization information via one or all of the first, second, third and

fourth signal lines during a vertical blanking period; and operating the pseudo-random number generator to generate said pseudo-random output values as a function of the established session key.

Kohn et al. teaches the random number generator is stored in the source device (fig. 2, ref. num 200); operating the source device to communicate with the destination device so as to establish a session key and synchronization information via one or all of the first, second, third and fourth signal lines during a vertical blanking period (fig. 6, ref. num 529); and operating the pseudo-random number generator to generate said pseudo-random output values as a function of the established session key (fig. 6, ref. num 530).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine establishing a session key during a blanking interval and generating random output values as a function of the session key, as taught by Kohn et al., with the method of Thue/Maeshima et al. It would have been obvious for such modifications because establishing a session key is needed in encryption/decryption devices in order for proper decryption to take place. Generating pseudo-random output values as a function of the session key utilizes the established session key to use as a seed for a pseudo-random number to provide random data that is used in encrypting the data.

Regarding claim 39, the combination of Thue as modified by Maeshima et al./Kohn et al. teaches wherein generating a fourth signal includes processing at least one of the first, second or third signals to generate the fourth signal from said at least one of the first, second, or third signals (see col. 2, lines 6-24 of Thue).

Regarding claim 40, the combination of Thue as modified by Maeshima et al./Kohn et al. teaches wherein generating a fourth signal includes performing the act of switching between at least two of said first and second signals to generate said fourth signal (see col. 2, lines 6-24 of Thue).

Regarding claim 41, the combination of Thue as modified by Maeshima et al./Kohn et al. teaches wherein generating a fourth signal includes:

- Performing a high pass filtering operation on one of said first, second and third signals to produce a filtered signal (see fig. 2, ref. num 225 of Thue); and
- Combining the filtered signal with a modulated pedestal signal to generate said fourth signal (see fig. 2, ref. num 230 of Thue).

Regarding claim 42, the combination of Thue as modified by Maeshima et al./Kohn et al. teaches wherein the first, second and third signals are red, green and blue video signals, respectively (see fig. 9 of Kohn et al.), the method further comprising the steps of encrypting horizontal synchronization information into at least one of said red, green and blue video signals prior to changing which ones of the first, second, third

and fourth signal lines are used to transmit said first, second and third signals (see col. 4, lines 38-59 of Thue).

Regarding claim 43, the Examiner believes this step to be inherent in that further comprising transmitting a horizontal synchronization signal over said fourth line prior to using the fourth line to transmit one of said first, second and third video signals would be required in order for the system to operate properly. A horizontal sync would need to be sent over the fourth signal line before the fourth signal line was used to send other data.

Regarding claims 45 and 48, Thue teaches a method/machine readable medium of processing first, second, and third video signals which are coupling a source device to a destination device, the method comprising:

- Generating a fourth video signal (col. 2, lines 6-24);
- Transmitting the first, second, third, and fourth video signals over first, second, third and fourth lines (fig. 1, ref. num 130 and col. 2, lines 6-24);
- Modifying at least one of said first, second and third signals prior to transmitting them, the modifying including modulating horizontal synchronization information on each of said first, second, and third video signals (col. 4, lines 38-59).

Thue does not teach the transmitting including periodically swapping the lines used to transmit the first, second, third and fourth video signals; and operating the

source device to communicate with the destination device so as to establish a session key and synchronization information via one or all of the first, second, third and fourth video signal during a vertical blanking period.

Maeshima et al. teaches the transmitting including periodically swapping the lines used to transmit the first, second, third and fourth video signals (fig. 1, ref. num 50 and fig. 2).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine matrix multiplication utilizing matrix coefficients, as taught by Maeshima et al., with the method of Thue. It would have been obvious for such modifications because the pseudo-randomly generated matrix coefficients give a randomness to the encryption and the matrix multiplication operation using the coefficients allows a way to modify the red, green, and blue signals in order to encrypt the video signals (see col. 3, lines 21-23 of Maeshima et al.).

The combination of Thue in view of Maeshima et al. still does not teach operating the source device to communicate with the destination device so as to establish a session key and synchronization information via one or all of the first, second, third and fourth video signal during a vertical blanking period.

Kohn et al. teaches operating the source device to communicate with the destination device so as to establish a session key and synchronization information via one or all of the first, second, third and fourth video signal during a vertical blanking period (fig. 6, ref. num 529).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine establishing a session key, as taught by Kohn et al., with the method of Thue/Maeshima et al. It would have been obvious for such modifications because establishing a session key is needed in encryption/decryption devices in order for proper decryption to take place. Generating pseudo-random output values as a function of the session key utilizes the established session key to use as a seed for a pseudo-random number to provide random data that is used in encrypting the data.

Regarding claim 46, the combination of Thue as modified by Maeshima et al./Kohn et al. teaches wherein periodically swapping the lines used to transmit the first, second, third and fourth video signals includes the act of performing a matrix multiplication operation on the first, second, third and fourth video signals to determine the line on which each of the video signals are transmitted (see fig. 1, ref. num 50 Maeshima et al.).

Regarding claim 47, the combination of Thue as modified by Maeshima et al./Kohn et al. teaches further comprising:

- Operating a pseudo random number generator to generate a set of values (see fig. 2, ref. num 'ra,' 'rb,' and 'rc' of Maeshima et al.); and
- Wherein said matrix multiplication operation is performed as a function of said set of generated values (see col. 4, top of page of Maeshima et al.).

Regarding claim 49, Thue teaches a video adapter comprising:

- A video signal generation means for generating a fourth video signal (col. 2, lines 6-24);
- A pseudo-random number generation means for generating pseudo-random output values as a function of the established session key (fig. 1, ref. num 110 and 130); and
- Selection means for selecting one of the first, second, third, and fourth video signals for transmission over each of the first, second, third and fourth signal lines (fig. 1, ref. num 130 and col. 2, lines 6-24).

Thue does not teach the selection being performed in a mutually exclusive manner and as a function of at least one of said pseudo-random output values; and a session establishing means for establishing a session key and communicating synchronization information via one or all of a first, second, third and fourth signal lines during a vertical blanking period.

Maeshima et al. teaches the selection being performed in a mutually exclusive manner and as a function of at least one of said pseudo-random output values (fig. 1, ref. num 50 and fig. 2).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine matrix multiplication utilizing matrix coefficients, as taught by Maeshima et al., with the adapter of Thue. It would have been obvious for such modifications because the pseudo-randomly generated matrix coefficients give a randomness to the encryption and the matrix multiplication operation using the coefficients allows a way to modify the red, green, and blue signals in order to encrypt the video signals (see col. 3, lines 21-23 of Maeshima et al.).

The combination of Thue as modified by Maeshima et al. still does not teach a session establishing means for establishing a session key and communicating synchronization information via one or all of a first, second, third and fourth signal lines during a vertical blanking period.

Kohn et al. teaches a session establishing means for establishing a session key and communicating synchronization information via one or all of a first, second, third and fourth signal lines during a vertical blanking period (fig. 6, ref. num 529).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine establishing a session key, as taught by Kohn et al., with the adapter of Thue/Maeshima et al. It would have been obvious for such modifications because establishing a session key is needed in encryption/decryption devices in order for proper decryption to take place. Generating pseudo-random output values as a function of the session key utilizes the established session key to use as a seed for a pseudo-random number to provide random data that is used in encrypting the data.

Regarding claim 50, the combination of Thue as modified by Maeshima et al./Kohn et al. teaches wherein the video signal generation means includes means for generating said fourth video signal from at least one of said first, second and third video signals (see col. 2, lines 6-24 of Thue).

Regarding claim 51, the combination of Thue as modified by Maeshima et al./Kohn et al. teaches wherein the selection means includes use of a matrix multiplier (see fig. 2 of Maeshima et al.).

Regarding claim 52, the combination of Thue as modified by Maeshima et al./Kohn et al. teaches further comprising means for modulating horizontal synchronization information on one of the first, second, third, and fourth video signals (see col. 2, lines 6-24 and fig. 2, ref. num 225 of Thue).

Regarding claim 53, the combination of Thue as modified by Maeshima et al./Kohn et al. teaches wherein the first, second, third and fourth video signal are analog video signals (it is inherent from Thue that the signals are analog).

Response to Arguments

6. Applicant argues that prior rejection is moot because all claims are canceled.

Regarding applicant's argument, a new rejection has been made for the cited claims.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2136

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon Hoffman whose telephone number is 571-272-3863. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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